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Request For Continued Examination (RCE) Transmittal

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|------------------------|------------------|
| Application Number | 10/581,138 |
| Filing Date | May 31, 2006 |
| First Named Inventor | Buckle |
| Art Unit | 1791 |
| Examiner Name | Luk, Emmanuel S. |
| Attorney Docket Number | 19350-136893 |

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☒ Other Return Postcard

2. Miscellaneous

- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(d) required)
- b. ☐ Other _____

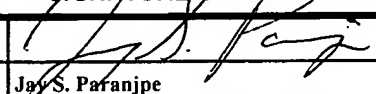
3. Fees

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

- a. ☒ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments to Deposit Account No. 50-1759.
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☒ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

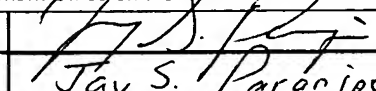
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

| | | | |
|---------------------|---|------------------|---------|
| Signature |  | Date | 7/19/10 |
| Name (Print / Type) | Jay S. Paranjpe | Registration No. | 41,486 |

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

| | | | |
|---------------------|---|------|---------|
| Signature |  | Date | 7/19/10 |
| Name (Print / Type) | Jay S. Paranjpe | | |

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 1791 Confirmation No. 2005
Examiner: Luk, Emmanuel S.
Applicant: Buckle
Serial No.: 10/581,138
Filing Date: May 31, 2006
Title: ARTICLE METHOD AND APPARATUS OF FORMING EXPANDING
PLASTIC MATERIALS IN A STEAM CHEST MOLD

AMENDMENT

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Office action mailed January 19, 2010, Applicants have made a request for continued examination. Please amend the above-captioned patent application as set forth below.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A steam chest molded article molded from an expandable plastic material comprising a molded feature out of die draw.

2. (Withdrawn) The steam chest molded article as defined in claim 1 wherein the molded feature is at least one of a recessed and a protruded feature.

3. (Withdrawn) The steam chest molded article as defined in claim 2 wherein the molded feature has one of a plurality of angles outside the line of die draw.

4. (Withdrawn) The steam chest molded article as defined in claim 1 wherein the expandable plastic material is one of a styrene polymer, an acrylonitrile butadiene styrene (ABS) polymer, and a polyolefin.

5. (Withdrawn) The steam chest molded article as defined in claim 1 for use as an energy absorber in automotive vehicles.

6. (Currently amended) A steam chest mold apparatus for forming molded a article having at least one out of die draw feature comprising:

a first mold portion and a complementary second mold portion for defining a mold cavity therebetween, said first mold portion including a fill plate having an inlet for introducing an expandable plastic material into the mold cavity; and

a cavity pull system comprising an actuator, a cylinder shaft operably coupled to the actuator and extending through the fill plate, and a gear mechanism including a pinion engaging the cylinder shaft and a rack pin engaging the pinion, the rack pin substantially at a right angle to the cylinder shaft and extending from the gear mechanism into the mold cavity, the engagement

of the cylinder shaft and the pinion ~~driving~~ causing linear motion of the rack pin into the mold cavity for forming the at least one out of die draw feature.

7. (Cancelled)

8. (Previously presented) The steam chest mold apparatus as defined in claim 6 wherein the rack pin is guided by a bushing.

9. (Original) The steam chest mold apparatus as defined in claim 6 wherein the cavity pull system is made from a temperature resistant and humidity resistant material.

10. (Original) The steam chest mold apparatus as defined in claim 9 wherein the temperature resistant and humidity resistant material is a stainless steel.

11. (Original) The steam chest mold apparatus as defined in claim 6 wherein the gear mechanism is made from brass.

12. (Previously presented) The steam chest mold apparatus as defined in claim 6 wherein the pin is for engaging into the mold cavity at a plurality of angles so as to provide a molded feature at a plurality of angles out of die draw.

13. (Original) The steam chest mold apparatus as defined in claim 6 wherein the pin is moveable between a first position substantially outside the mold cavity and a second position substantially inside the mold cavity.

14. (Withdrawn) An energy absorbing element for absorbing an impact in a vehicle, said energy absorbing element made from expandable polypropylene in a steam chest mold, the energy absorbing element comprising an out of die draw feature.

15. (Withdrawn) The energy absorbing element as defined in claim 14 wherein the out of die draw feature has one of a plurality of angles out of the die draw.

16. (Withdrawn) A process for making a steam chest molded product including a molded feature that is outside the line of die draw comprising the following steps:

providing a first mold portion;

providing a second mold portion, said second mold portion being complementary to the first mold portion;

closing the first and the second mold portion with respect to one another for forming the mold cavity therebetween;

engaging a cavity pull system for molding a feature that is outside the line of die draw;

filling the mold cavity with an expandable plastic material;

introducing steam into the mold cavity for expanding and bonding the expandable plastic material to form the molded product;

disengaging the cavity pull system;

opening the mold; and

de-molding the molded product.

17. (Withdrawn) The process as defined in step 16 wherein the step of engaging the cavity pull system comprises the steps of actuating a cylinder for driving a gear mechanism and wherein said gear mechanism is for driving a pin into the mold cavity.

18. (Withdrawn) The process as defined in claim 17 wherein the pin is driven into the mold cavity at one of a plurality of angles for providing a molded feature at one of a plurality of angles outside the line of die draw.

19. (Withdrawn) The process as defined in claim 18 wherein the molded feature is one of recessed and protruded features.

20. (Withdrawn) The process as defined in claim 16 wherein the expandable plastic material is one of a styrene polymer, an acrylonitrile butadiene styrene (ABS) polymer, and a polyolefin.

21. (Withdrawn) The process as defined in claim 20 wherein the expandable plastic material is polypropylene.

22. (Withdrawn) An energy absorbing element including a molded feature that is outside the line of die draw made by the process as defined in claim 16.

REMARKS

Claims 1-6 and 8-22 are pending in the above-captioned application. Claim 7 has been cancelled. Claims 1-5 and 14-22 have been withdrawn from consideration. Claim 6 has been amended. Claims 1, 6, 14, and 16 are in independent form.

Claims 6-8, 12, and 13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Application Publication No. 20020195736 to Potter ("the '736 reference") in view of United States Patent 3,548,451 to Carmi ("the '451 reference") and Japanese reference JP-2003001634 to Hirose ("the '634 reference") and U.S. Patent 5,776,521 to Wright et al. ("the '521 reference"). Applicants respectfully traverse the rejection.

Claim 6 of the above-captioned application claims a cavity pull system including a "rack pin substantially at a right angle to the cylinder shaft and extending from the gear mechanism into the mold cavity, the engagement of the cylinder shaft and the pinion causing linear motion of the rack pin into the mold cavity for forming the at least one out of die draw feature." **The cited references do not teach or suggest positioning a rack pin substantially at a right angle to a cylinder shaft wherein the engagement of the cylinder shaft and the pinion causes linear motion of the rack pin.** According to the Examiner, the '634 reference teaches a molding device including a rack and pinion 60, 70 that is used to actuate a rack 50 that drives the movement of an undercut mold 40, and the '521 reference discloses "an arrangement with the rack pin 76 that moves in a first direction, the pinion 68 that engages with the rack pin and the pinion able to engage with a mold core 20 with sleeve 46 (that is similar to the cylinder shaft), as seen in the Figures, the rack pin is substantially at a right angle to the cylinder shaft." In the '521 reference, however, the movement of the rack pin 76 causes the pinion 68 to rotate, and the rotation of the pinion 68 causes the sleeve 46 to rotate and move axially. The '521 reference does not, therefore, disclose linear motion of the rack pin 76 into a mold cavity, that is, the '521 reference does not teach or suggest a rack pin substantially at a right angle to a cylinder shaft wherein engagement of the cylinder shaft and the pinion causes linear motion of the rack pin into the mold cavity. Instead, the '521 reference discloses that linear motion of the rack pin 76 causes the rotational motion of the sleeve 46. Therefore, claim 6, as amended, is not unpatentable in view of the cited references.

Claims 8, 12, and 13 depend from claim 6 and, as such, must be construed to incorporate by reference all the limitations of the claim to which they refer, *see* 35 U.S.C. §112, fourth paragraph. Thus, each of claims 8, 12, and 13 is allowable for the reasons set forth above.

Therefore, Applicant respectfully requests that the rejection of claims 6-8, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over the '736 reference in view of the '451 reference and the '634 reference and the '521 reference be withdrawn.

The Examiner has rejected claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the '736 reference and the '634 reference and the '521 reference and further in view of United States Patent 4,114,759 to Maloney ("the '759 reference"). Applicants respectfully traverse the rejection.

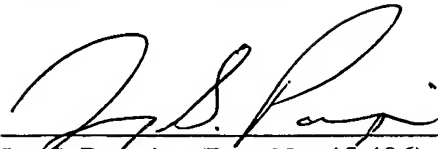
Claims 9-11 of the above-captioned application depend from claim 6 and, as such, must be construed to incorporate by reference all the limitations of the claim to which they refer, *see* 35 U.S.C. §112, fourth paragraph. Each of claims 9-11 must be read as including the limitation of a rack pin substantially at a right angle to a cylinder shaft wherein the engagement of the cylinder shaft and the pinion causes linear motion of the rack pin into a mold cavity. None of the cited references teaches or suggests a rack pin substantially at a right angle to a cylinder shaft wherein the engagement of a cylinder shaft and a pinion causes linear motion of the rack pin into a mold cavity. Thus, claims 9-11 are allowable for the reasons set forth above.

Therefore, Applicant respectfully requests that the rejection of claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the '736 reference in view of the '634 reference and the '521 reference and in further view of the '759 reference be withdrawn.

It is respectfully submitted that this patent application is in condition for allowance, which allowance is respectfully solicited. If the Examiner has any questions regarding this amendment or the patent application, the Examiner is invited to contact the undersigned.

Appl'n No. 10/581,138
Response dated July 19, 2010
Reply to Office action dated Jan. 19, 2010

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J.S. Paranjpe", written over a horizontal line.

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Date: 7/19/10
Attorney Docket No: 19350-136893